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REPORT OF THE STEERING COMMITTEE, AND DISCUSSION, WITH REFERENCE TO THE PROPOSAL FOR THE ESTABLISHMENT OF A NATIONAL LONG-TERM RADIATION PROGRAM:

SNIDER: Let us move to category five, report of the steering committee on further developments of the long-term radiation program of primates. I believe Dr. Endicott will introduce the discussion.

ENDICOTT: This by now has become a sort of cause celebre with considerable confusion in my mind and everybody's else as to just where we stand, what has happened, who is advising whom, and so forth. I would like to crystallize my impressions of where it stands. I conferred with Chuck Dunham to see whether he feels I captured the history and spirit of the thing, and so without further ado, I think I will launch into it. You will recall that this group at its last meeting finished polishing its recommendation to the Public Health Service that a long-term study of the effects of radiation in primates be established and that adequate facilities be located in an appropriate institution. As a preliminary to taking that report to the Cancer Council, which, because of the changed nature of the package, was not altogether an appropriate Council any more, but the one we elected to use, we met with representatives of other interested agencies to explore the attitudes of the several agencies. I made a summary reaction at that time. Each of these can speak for himself. As for the Public Health Service, our attitude was that from the standpoint of holding interest, the Public Health Service was probably even more interested and more concerned with the geriatric aspects than with the strictly chronic radiation aspects, particularly as they might focus on the practical problems of atomic warfare. The ONR had its interest primarily from the standpoint of wishing to see a facility established where investigators wanting to use primates, whatever their interests might be, might carry out their work properly. The Air Force in expressing its position indicated that they had considerable interest in the primate area from the military viewpoint, and that they were already engaged in securing answers to their own particular problems with studies under their own sponsorship. Dr. Lawton (AF) expressed the belief that they were not covering all of the areas in which we were interested, and that perhaps they had limited interest in gerontology, since fliers get retired from flying before they get into that age period. They would like to see this program go forward, but were not in a position to put money into it. With that background we presented the matter to the Cancer Council and asked appropriate representatives of the various agencies, Dr. Dunham and Dr. Bower (AEC), Dr. Reynolds (ONR), Dr. Lawton (AF), to present their views. As a result of the discussion, the Council expressed the belief that this was an important research area and recommended that a steering committee be appointed to consider the problem further and that a more specific proposal be presented to them for final action. The steering committee, consisting of Drs. Snider, Dunham, and me, met in Washington early in January to decide what we were going to do. This was the situation with which we were faced. None of the agencies represented, had any funds for construction, so that if anything was to be established in an institution, we had to figure out how to get facilities. Exploration had already been made in a tentative way with the Ford Foundation, and it was felt that we might be able to get them to come in on the construction side, if AEC and the Public Health Service would be willing to underwrite the operation of

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the facility once it was there, and if we could find a suitable institution wanting to sponsor this program. In trying to plan what sort of pitch we were going to make when going to those institutions based on some experiences we had already had, we felt that we would have to have in our own minds well developed radiation studies which we were going to ask them to carry out, since the interests of the institutions considered had not been primarily in radiation; they had to do what we wanted in return for the primate facilities in which they could also carry on the studies they wanted to do. We felt we could not draw up such plans until we saw that the Air Force was doing. We arranged to visit the Air Force installation at San Antonio and Austin; Dr. Dunham and I got there. Dr. Snider spent 36 hours warming the benches at the Chicago Airport and never got off the ground, so he was unable to attend. Since he was unable to attend, I think he feels he never really functioned in the steering committee and considers himself a part of the next committee on the agenda. Based on what we saw at the Air Force installation, Dr. Dunham and I felt that perhaps minor alterations and additions to the Air Force program, would take care of those features which we interpreted as needing to be done (I must admit I am quite vague as to just what things you did want done), and, our feeling was that it would probably not be justified in setting up additional large, very expensive, long-term studies directed specifically at what we assumed you have in mind. Based on that impression, and after discussion with Dr. Snider, your steering committee really, in effect, has decided that it should not steer and wishes to hand back to the Committee the problem. It is up to the Committee on Radiation Studies to further study and see whether or not, in the light of the situation at Austin, we should go ahead with the original proposal or should modify it, or abandon it. I think that is really the actual situation. I might say that based on a number of discussions with one or more members of the Radiation Committee during the past few weeks, the indications are that there is considerable disagreement with our interpretation. We have had an opportunity, some of us, to talk to Major Toma (Air Force). I hoped he could be here today, but he had to return to Texas. My own impression at this point is that the Committee itself, before launching on a 20-year, ten million dollar program, ought to go down, look over the operation there in some detail and in the light of what they see, advise the Public Health Service what the proper next step is.

QUIGLEY: I think we ought to think further about Dr. Endicott's report. We have been thinking to some extent. Dr. Furth will you make a statement?

FURTH: I think the Chairman of the Committee should have the first word.

CURTIS: I will talk. I don't know if I can say too much, to answer Dr. Endicott, not very briefly. The original subcommittee that made the proposal which was an ad hoc committee was composed of you, Ray Snider, Nathan Shock, Earl Engle, and me. The original idea that we batted around and put in writing in concrete form was that such long-term primate studies were very important and should be done; but that in addition to that, it being a large and expensive program, we felt there were many other studies that could go along with that to a certain extent, and may have to somewhat depend upon your inclination to justify the expenditure of that amount of money to establish a national laboratory for long-term primate studies. We had no thought of

encroaching at all on the more short term primate studies that are becoming increasingly important not only in radiation but in other phases of biological and medical research. We felt that this program was rather important. The whole thing added together seemed rather urgent to us. I received the viewpoint of the Steering Committee in the form of a letter from Dr. Snider indicating that all of a sudden it turns out that the group at Austin is doing all of these long-term studies and therefore it seemed inadvisable for us to consider our proposal further; I confess I reacted a bit to this, for a number of reasons. I know Jake did also, as did some of the others. It is only fair to indicate some of the reasons for our reactions. In the first place, let me say, I know nothing really about what is going on at Austin. I talked to Chuck and to Ken last night for some time, and they told me the sort of things going on there. I don't specifically know the numbers of animals, dosage levels, and conditions under which they are kept. I cannot comment on that aspect of it.

QUIGLEY: Many of us would like to know what fields are being studied.

ENDICOTT: I can't tell you everything they are doing there. I don't know.

TALBOT: A lot of the work is classified, but can be mentioned in general terms. First I would like to say, that what I recall of the original plan of the primate program that they are not currently doing nor do they plan to do all things this Committee is interested in doing on a long-term basis. The Air Force started studies in response to nuclear powered airplane program to determine behavioral changes that might ensue from chronic low-life radiation of mixed gamma and neutrons. It started in 1951 at Austin. It now covers quite a gamut of things, and it is designed for support of the nuclear powered airplane program. Other points of interest to the Air Force are being watched, such as leukemia, changes in life span, etc. The behavioral studies are still the big factor there. We think that the behavioral program is going to be self-limiting, because so far in the dosage levels and total dosages of interest, little has been found of significance. Dr. Harlow may disagree with me on this. They are also doing work on effects of massive instantaneous dosages for another classified purpose and have the wherewithall to do this. The Air Force is also using Los Alamos for this. They are also following these animals with other studies such as biochemical and hematological. They are going into relative biological effectiveness of neutrons, although they are small and limited as regards sources. They are in pretty good shape to study the R.B.E. of different ratios of neutrons to gammas and also additivity of effects. They have about 500 rhesus type monkeys and 25 chimps. Also they have rat facilities there. Without too much struggle they could double their animal capacity. These may be built in a magnesium plant. The walls and foundations are there. They could put in partitions and one floor, a roof and have it made. This is roughly what they are doing now. I should add, this last month the prime responsibility for radiobiological research has been transferred to the school of aviation medicine so that we expect the program to expand. They will have to increase the staff. We have been given, or rather we have given them eleven manpower spaces from our air reserve and development command. Manpower spaces are the most precious commodity we now have, so that they

have that definitely.

ENDICOTT: I am going to add one point here. In discussing this with Col. Gagge after my return to Washington, when I mentioned to him that there were several dosage areas, that Dr. Dunham and I thought this Committee might like to have added, and indicated to him that the AEC might be willing to make some transfer of funds in order to make that possible, if that was a question, Col. Gagge indicated they would be delighted to have the suggestion. He didn't feel any transfer of funds would be required. I am bringing this in to round out the picture.

RUCH: What is there to be done between radiation and availability of pathologists? Is this a pathology program or behavioral studies?

TALBOT: No. I think they will be self-limiting.

RUCH: What other types of studies will be carried on during that 20 years?

CURTIS: I was going to go on with ^{my} thoughts. As I indicated I don't feel too competent to comment on the studies at Austin at the present time, but I do feel this, that the experiments in the Austin laboratory would in no way be a true substitute for the primate laboratory which we had visualized. There are quite a number of reasons for this. We visualized a place where investigators from a number of different laboratories would come to do some of their work. Dr. Engle indicated rather strongly in connection with Dr. Ruch's project that he would like to have a central laboratory where he could go to examine these young monkeys from time to time. That is the kind of thing we had in mind, and it is my impression, that there were other things, for example the gerontological aspects of the problem would not be covered by addition to the Austin program. I don't see, aside from the strictly radiation aspect of it, how this would be a substitute for the program which we outlined. However, I would say here, let us assume that the radiation studies are being carried on in a very adequate and satisfactory way and assume further that they will be, the reports will not be declassified so that they will be public knowledge. If one assumes that, then I think it is fair to look at what is left of the program, or whether the Public Health Service should then consider going ahead with the whole thing as outlined. My feeling, and I can only speak for myself, is that it being such a large and expensive program, I don't see how we would be justified in really paralleling the work of the Air Force. If they are doing it, we would have to justify it, if at all, on other grounds, perhaps on gerontology, long-term studies in reproductive physiology, or something like that. I don't know whether one should at all then consider going on with the original proposal. I feel the primary question that we need to have answered is is the Air Force really doing as good a job on this as the sum of the reports have lead us to indicate and is it covering the whole job in a way which we feel would be adequate.

FURTH: When this information of the results of the Steering Committee's visit reached me, and I hope that I am not functioning as a pathologist speaking post mortem, I tried to determine what attempt should be made to rescue our project. I am almost the only one who had some idea of what went

on in Austin. Perhaps I should have warned the Committee about the Austin program. To begin with, when I entered upon this proposal with the other members of the Committee, I thought that we are doing a service to the Air Force and AEC and we do not want to undertake anything contrary to their needs. I still maintain that the establishment of this primate laboratory might be of great help to the Air Force and other branches of the armed services and might help others. I am convinced what is going on there is good and may answer their major questions.

The question for us to determine is, is there a need for a Primate Laboratory such as we had in mind? Is it in any way a duplication of the long range Primate program under AF at Austin?

The PL, as we conceived it, would be a place where:

- a) primates of both sexes are studied;
- b) not only young adults, but animals of all ages;
- c) even pregnant females and fetuses;
- d) where the dose is not that to which an airman is exposed that is predominantly intermittent, low level, and repeated, but all types of radiations, massive and small doses, single and multiple; single as would come, for example from an atomic explosion, also isotope hazard as would come from therapeutic experimentation in man, or as would be conceived by scientists;
- e) the area of investigation was conceived to be broad, covering all branches of science and the problems would be both theoretical and applied;
- f) problems would originate mainly with investigators, although basic problems of national agencies could be contracted;
- g) the investigators would be career-scientists volunteering for this type of work for many years, some for a lifetime, and visiting scientists who would be given a place to study a problem of their choosing for periods of months, and not competent military officers assigned for rather short periods of time to a project designed by others according to the need and often completed by others. We recognize that AF has excellent consultants, but full-time scientists of high caliber seldom volunteer for a project not of their choosing, located at a remote place, restricted with respect to locations and publications;
- h) The Radiation Committee visualizes the laboratory as an integral part of a large research institute or university which would contract it so that "cross-fertilization" would be free. The senior members of the PL would have university titles, would be members of the respective university department and could participate, to a limited extent, in teaching activities. Vice versa, university staff and students would have access to the facilities of PL, thus the institute would both train and investigate;

i) chronic radiation studies would be just one basic area of research of this PL.

The distinguished liason officers of the AF, present at the fall 1953 meeting of the Committee on Radiation Studies stated individually and unanimously that their financing of a research laboratory has no long-term assurance. Suppose the AF will have other developments solving their power problem or the radiation hazard is licked from their standpoint, would the AF still be willing to nurture this institute, or would Congress approve its budget?

The need for a PL has been recognized for a long time. The Yerkes Laboratory of Yale and the Puerto Rico venture are examples. Limited scope, inadequate financing, remoteness of location are some of the reasons for their struggle for existence. Members of the former Gerontology Study Section have long voiced the need of a similar PL, but their efforts failed because at that time it could not be financed on the basis of gerontological needs only. Cancer research workers would make good use of such a facility also. Alone, none of these specialties could justify the initiation of a National Primate Laboratory.

There is no doubt in our minds that the AF project in Austin is essential and good, that it will yield scientific as well as practical information in radiation biology of primates, and that it should be given higher priority by the Federal Government than our PL proposal. But, is it not true that the AF problems would only profit from supplementary knowledge coming from this PL, and that it is unsafe to "put all our eggs in one basket?"

Could the Atomic Bomb project have been achieved in a single laboratory of a single branch of the Armed Forces with the aid of scientists who could be recruited for such work in peace time? Is AEC not profiting tremendously from the existence of several national laboratories and projects sponsored elsewhere, even though there may be duplications? Duplication is never perfect; furthermore, it is desirable; there is little confidence in a discovery until it is confirmed.

This is a digression, but deserves your attention. There are plans to expand the business economy to counteract unemployment in case of a recession, such as building roads, houses, etc.; are we scientists not narrow-minded if we fail to come forward with projects for increasing the nation's basic scientific facilities? Isn't knowledge our best long-range asset?

It is evident that our proposal to the Cancer Council was inadequate and justifiably brought about a temporary rejection. If the project is kept alive, I recommend that the Sub-Committee, which was responsible for its initial preparation should be broadened to include representatives of interested disciplines and members of the AF and the AEC and others. The project should be strong enough to be presentable to the Bureau of the Budget by the USPHS alone, with the understanding that this laboratory may serve other branches of the government.

SNIDER: Is the chairman allowed to comment? I feel somewhat in the middle here. I feel very strongly now, and felt quite strongly all along on this matter. It is inconceivable, I think the Air Force will agree, that the Air Force is going to solve all the primate problems we had considered in the beginning. I can't help but admire the attempt to do that. This has a broader scope than just straight radiation, and I am almost certain you will see the primate entering biological research in general, and the one agency that cuts across all of those is the Public Health Service. I would like to urge, and this is in the original report, in a limited fashion, - I would like to urge that the breadth of this be considered by the Public Health Service. I would like to urge that the Air Force continue on in their national program. They do have to meet certain specific needs. Also, I would like to say, I don't see how that one program will solve all these problems, regardless of who runs it, AEC, Public Health Service or the Air Force.

ENDICOTT: I would like to point out, recall again, and focus this discussion on the actual situation in which a Steering Committee finds itself when it is asked to bring in concrete proposals to a Council to establish a large program. A Steering Committee takes on considerable responsibility when it goes to a university and asks it to present a proposal to establish a national laboratory of the sort that Dr. Furth has been talking about today. That was not our understanding of what our task was. If that is the task which a Steering Committee undertakes, then what is going on in Austin becomes completely irrelevant if radiation drops out of the picture as a quid pro quo or preliminary aspect here, and we are inviting proposals to establish what would have to be a much larger facility than the one we were talking about in terms of 500 monkeys to accommodate all sorts of visiting scientists and programs. One would have to be prepared to explain well beyond 500 monkeys, because Dr. Schmidt uses 460 odd for studies in malaria. We came back to you as a Steering Committee with our understanding of the package that was put together on which we were trying to invite proposals. If we approach it from another angle, the Cancer Council, to a considerable extent, becomes quite a secondary consideration here. It involves essentially every Council of the Public Health Service. From an administrative standpoint, it is quite a problem to set up something of this sort - a complicated effort between government and university on an indefinite basis. There are many problems to resolve. Is this a venture like Brookhaven? Is it going to be set up like any completely intra-university set-up in which the university has complete control? Do we set it up in some limited fashion so that we exercise choice over what goes on? Who is admitted as a guest investigator? These are problems that are not easily solved by your Steering Committee. I am glad the problem is back here for further discussion because I, at the present time, would have a heck of a time going to the President of a University and making an offer or invite from him a proposal to bring back to present to a Council or six or seven Councils or the Surgeon General or Congress, unless we do a considerable degree of defining, for example in most universities they decide who comes in. Is that in the nature of a national laboratory? Most universities do not consider themselves to be national laboratories. They decide who comes in. Are we talking about a national laboratory or about an institute within a university? Do we set it up in Brookhaven? These get to be difficult administrative issues.

RUCH: Wasn't there a warm response on the part of the universities even when tied down to radiation?

ENDICOTT: There were varied responses.

RUCH: It would not be difficult to get a university to sponsor a new version.

ENDICOTT: The universities that responded, the ones that I visited in a very tentative way before the Council met, each one had a different area of interest. Most of them were not interested in radiation. They would be willing to do some radiation studies if we tell them what we want done in return for which they would like to have this primate facility. If we talk to people about facilities, they will tell us what they would like to do, and how big a facility they would like. I must confess I never did present this to a university president or vice-president from the standpoint of whether they would like to establish a national laboratory in which anyone can come to work. How they would react to that I don't know. I don't know if any university considered that phase of the proposal.

CURTIS: I would like to say I don't think you misunderstood the directive of the Committee too badly. I think Dr. Furth and I had different views. I don't know how much they differ from Snider's. If you have a 50-man committee, you have 50 different ideas. My feeling was that this would be some kind of a national laboratory, just what kind would depend on where it was, who was director, etc. I had the feeling that the radiation problem would be one of the paramount problems that would carry the whole program. If you are going to leave out the long-term radiation program as being the major reason for going ahead, I would feel we ought to pull back and reconsider whether the time is ripe, or if it is a good idea to set up a national primate laboratory. Maybe if we are going to remove the major problem from it, it is necessary to whittle it down to size, and have the universities handle it in the same way Schmidt handles his problem.

ENDICOTT: Since we had this discussion, I reached a decision as to what you can do to explore interests in studies on primates and the desirability of having the proper facilities. One could find 15, 20, 30, reasonably good medical centers in which there is a medical school, good hospital facilities, university, and other technical plants in the general area that would very much like to have a primate facility. There is no question about the demand for that. There is no question in my mind that a great deal of worthwhile research would be of interest to a great many people.

SNIDER: I see in here gerontology, social psychology, experimental psychology, social science, active scientific communities circulating through a training program for students, etc. That isn't limited to radiation either. I see in the budget, provision made for different scientific disciplines. I don't see what we are discussing except the radiation aspect as it overlaps what they are doing in Austin.

QUIGLEY: The overlap is very slight.

SNIDER: Dr. Hamm, you are a university man, and you are affiliated with the Austin project.

HAMM: I am consultant to the Austin project, and I don't disagree at all with what I have heard. It is a bit amazing to me how things could have been misconceived in the beginning. The way Dr. Furth outlined the program, I think Col. Talbot won't mind my saying that I don't think the Air Force project could satisfy it.

FURTH: Would it help to have additional material available for them?

HAMM: There is no strong feeling. The Air Force cooperates with various people in various fields concerning radiation problems, and they welcome quite a few people to do things with or for them. It seems, anything you decide would in the long run, benefit the Air Force, and in a small way your studies can benefit from them. I don't feel I have any other comments to make at the moment.

SNIDER: Could you give the group a statement concerning the approximate range of radiation exposure?

HAMM: I could outline my personal concept in radiation cataract. The Air Force has a comprehensive program as far as primates are concerned. They have done acute studies with pure neutron 14 MEN, 850 rep to half rep; they have done pure gamma ray exposures in ranges from 250 r to 3,000 r. Meso exposures in the Oak Ridge swimming pool at the ratio of gamma rays to neutrons 20 and 30 to 1 have been carried out. These experiments were done 18 months ago. Seventy monkeys have been examined up till now. All this, I think, is done from the standpoint of neutrons. Thermo-neutrons have been studied at Los Alamos. A terrific amount of time was spent on dosimetry. Various people were consulted; nearly all the people worked with them and checked and calibrated with them. While it is far from perfect, and dosimetry is in a great state of confusion, a great effort was made to use all available means. The Air Force, on their own volition, put the problems before the Radiation Cataract Committee sponsored by NRC and AEC and freely discussed for two hours at the last two meetings about the Air Force program; suggestions were made; and most recently, at the last meeting, the Air Force was anxious to find a man at Columbia to do histology studies; and the work is going forward now. All this is with reference to the radiation cataract program. I do not feel competent to say much about other programs. Col. Talbot mentioned massive doses. I think some of you heard the talk in which the Air Force collaborated with the army in exposing animals. Los Alamos collaborated, and the Oak Ridge group did also on dosimetry, and provided personnel for the Air Force.

SNIDER: I would like to ask the Committee members to speak up. Dr. Quigley, Dr. Nickson?

NICKSON: It is clear that the intent appeared to be a different arrangement than that from the Air Force.

TALBOT: The animals are being followed closely biochemically and anatomically. They are looking for the sensitive and important end points in terms

of the welfare of the people who fly aircraft such as life span changes, permanent sterility, leukemia and cataract. I have been dismayed to get the feeling that the Air Force has suggested that its Austin program could meet the requirements of the original version of the Committee's proposal. I want to go on record as saying it is inconceivable that the Air Force program set up to meet urgent requirements, could expand to meet the original version of this Committee, without drastic revision.

ENDICOTT: You feel it does not cover the prime effects of radiation in primates, on gerontology or reproduction in primates?

TALBOT: It would fail to cover any chronic effects in primates that this Committee would be interested in.

FURTH: I don't like the basing of the science in warfare, the baseline should be objective. The data will be baseline for further study, for example, the eyes; they have a limited number of investigators and limited objectives; their work is just a beginning. It is not what the proposal to Public Health Service is.

ENDICOTT: When going out to ask an institution to take on the responsibility, I have the problem of defining what the institution's responsibility will be. Listening to your comments, I would certainly agree with you, that neither this group, nor any one group will do all of the possible things that could be done in elucidating long-term effects of radiation. Putting it in the form of a question, would it be appropriate to approach an institution in light of present discussions by saying that we would like to have you work in radiation, but we don't have any specific suggestion to you? It is a different approach.

FURTH: It cannot be answered in a short time. It requires careful thinking. I should like to call your attention to point "C" in the project proposed which says we will not tell you what is going to be done. We could give a broad outline which could be considered before going to the president of the University. I think the mistake on my part was who should decide an advisory board? Such a group recommends certain things to be done and advises the institution. Isn't that the way you operate? It gives a certain amount of freedom in institutions.

DUNHAM: It looks as though little has been said with which any of you are disagreeing. It leads me to think, because this project started under the auspices of the Committee on Radiation, that there was a tendency to over-emphasize the radiation studies. Now the thing is coming back into perspective. We know there are things going on in Austin, and the Air Force doesn't have to set it up as a crash project. What is needed are definitive data on humans, and that we can take a new look at, and, as you know, I have always been inclined towards long-term studies with any animal. It is difficult to get started and get people committed. As a member of the Committee, I would be happy to do anything I can to help develop an appropriate and feasible useful program of long-term studies in the primate. We have no setup on radiation basis in dogs. So far as I know, there are no long-term studies in dogs. From a physiological standpoint these are beautiful animals to study.

TALBOT: I do not want to contradict what Col. Gagge told you about the Air Force program in Austin. I am sure Dr. Endicott said the Air Force would like to do all it can to cooperate and make facilities available, and I think it is possible to look into a much larger setup, and if it proved to be desirable, a primate radiation laboratory of this type could ensue. Right now, I don't want the Committee to feel I, as representative of the Air Force, feel we have to work behind closed doors. This isn't the case at all.

ENDICOTT: The question put to Col. Gagge had to do with whether approximately 100 additional monkeys could be exposed to one or two specific dosage schedules and followed for the duration of their life. He said that could be added. He did not say they could add everything we were talking about.

TALBOT: That was all. I was afraid I might have created the impression in speaking for the Air Force that it is so engrossed in its own program that it could not be interested in the other things.

RUCH: My view is that this radiation laboratory suggested is a part of a still larger problem which I would like to see the Public Health Service undertake; it is facilitation of primate research of public health significance. Also I feel that in starting, radiation should be considered from the point of view of its size; should it be a pilot experiment duplicated elsewhere in other universities of the country? That might, for example, suggest a more modest approach, with the hope that it would be of a size which could be duplicated elsewhere if successful. Since there are so many disciplines involved, even though this Committee emphasizes quite a large range of disciplines, I wonder if what is not needed is a Sub-committee to study further, the questions of supporting a primate laboratory for long-term primate research and other devices to facilitate primate research. Now that we have clarified the objective, some of the problems of the relationship to the university are clearer in mind through your visits. This should let us have a chance to introduce some of these notions of participation in the procurement of primates, and other devices as well. I think some such sub-committee with broader objectives might be profitable.

SNIDER: Dr. Meader?

MEADER: I think most of the things have been said. I can't contribute anything else.

QUIGLEY: As Dr. Dunham said, most of us are in agreement that we get on with the problem further and consider the appointment of a sub-committee for reactivation of the proposed project. Time has been lost, but at least the discussion has helped in clarifying our impressions.

DUNHAM: May I make a comment? I think there is one thing confusing from the beginning and we ought to have it out; it is that what we are talking about is establishing a laboratory around the animal instead of around the solution of a problem or undertaking of a study. Shouldn't it be a long-term study; you can put dogs in it as well. I think it should be oriented in that direction.

SNIDER: Dr. Hamm?

HAMM: I don't think I can say anything more except I hope that the project can go ahead. Major Toma, before leaving, made it clear the Air Force would be delighted to assist in any way; if a large group wanted to come to Austin, this could be arranged.

QUIGLEY: It needs to be emphasized clearly that the general program is similar to the desires expressed here. Its objective and that of the program of the Air Force do not overlap.

ENDICOTT: I think you are ready for a vote. You are a Committee advising us. There is an issue here I would like to put on the table, because this is really a serious problem to us. We have never established a program in a university in which we retained the right through an advisory committee to determine, to plan, to influence, the day to day, week to week, month to month, year to year, trend of the research. I am not sure that even if a university should agree that it would accept money under those circumstances, that the Public Health Service would necessarily want to enter into that type of arrangement. It is quite foreign to the policy and philosophy of the Public Health Service and is not typical of our grants program. When we operate an institute, the Public Health Service operates it directly, whether it is in Washington, Montana, Tennessee; or wherever we establish a large laboratory to study a problem. It has been an internal operation and not a grant operation, so that the proposal as it is here suggested, I am sure would be subject to prolonged scrutiny; and I am not sure that this type of approach would be endorsed by the Surgeon General. I would be inclined to advise against it myself. From the standpoint of providing primate facilities and underwriting them for long-term support in universities for work they would like to do, it would require no change in policy. Would one university be interested, ten, twenty or one hundred? The only problem would be does this stack up with other requirements? If it looks like a good bet, nothing is needed in the way of policy procedure to put it in motion. If the proposal to us is acceptable, the grant is made. They have great freedom to proceed during the period of commitment. From the standpoint of Dr. Ruch's question as to whether the Committee might concern itself with services as a special type of procurement of primates, that is entirely acceptable. We have done that in other areas. We welcome suggestions.

SNIDER: There is a question from the floor. Dr. Dunham, would you care to comment on university registry and AEC?

DUNHAM: That was straight contract between the university and AEC administered through the New York office, and what actually goes on there is primarily vested in the director of the project. We control the budget so that there is that element of control. The University of Chicago is operated very much the same way. It has its own advisory group however, just as the Brookhaven laboratories do. However, it is an advisory group of its own choosing, so that they are all different. Again we control the purse strings.

SNIDER: I am not going to let you get away, General DeCoursey.

DE COURSEY: I like this idea of a national laboratory where many people can go to carry on work they couldn't do at their own institution. With reference to our organization many people come and tell us it is successful. They have a happy time with it. As for our advisory board, we have a scientific advisory board without which we could not work as well.

RUCH: I haven't studied this in detail; I like the idea.

SNIDER: We won't have any trouble getting personnel.

FURTH: The largest number of pathologists in the United States are in General De Coursey's establishment.

DE COURSEY: Fifty pathologists in one place.

RUCH: I like the suggestion that Dr. Dunham made referring to chronic studies. It is very proper to have an institute centered around an animal, and if we go back to Woods Hole, which is founded around a rat, it contributed very much to laboratory procedures. At the same time it is a poor animal around which to do that. I do believe that it has its advantages even though it is mostly on monkeys.

SNIDER: I am wondering if we shouldn't begin to try to focus our thoughts on this.

RUCH: Dr. Endicott has a point here. The Public Health Service, whom we have lauded for not going into business of directed research is being invited to do it. I am quite confused at this point.

SNIDER: This is good advice, and if we step out of line here we may have to reconsider our position; that it is the purpose of this meeting to see where we stand and see how we should reconsider our proposal.

ENDICOTT: I was confused as to just what I was to do, and I am back here for more advice.

QUIGLEY: In terms of what the group feels is desirable to do.

SNIDER: Dr. Quigley has a point here. We have got to settle down it seems to me, and do a little more leg work. I am sure Dr. Endicott would like a little more leg work.

ENDICOTT: I am your humble servant. I would like to get a proposal. The Cancer Council has asked for a proposal.

RUCH: A proposal from a university or a proposal from this Committee?

HARLOW: I think there are two parts to it. Obviously in terms of new information, the question should be re-evaluated whether you want one large institution or whether you want to try to accomplish the same thing by small

grants more closely tied to special institutions in terms of customary PHS grants.

CURTIS: I agree to this. It seems to me that our situation has now changed quite a bit, and I think we kicked it around here as long as it is profitable.

I do think we have got to go back to a smaller committee, have that committee present us with another definite proposal that we can chew on for awhile. I am afraid I don't quite agree that the Austin situation doesn't alter my thinking quite a bit. It does. I don't know exactly where I stand on it, and probably won't know until I find out a little bit more about the Austin program, and see to what extent it overlaps what we already have recommended. Then, depending on what the answer is there, come up with a new recommendation. I don't see any escape from getting a new sub-committee to come up with a new recommendation just as Dr. Quigley suggested.

SNIDER: Dr. Quigley, would you like to modify your proposal? Make it so that we are all clear on what we are doing here.

QUIGLEY: I recommend that you appoint a subcommittee to reconsider the desires of this Committee in regard to the long-term primate studies and make a report to the Committee at its convenience.

RUCH: Second.

SNIDER: Motion has been made and seconded.

RUCH: I would like to make an amendement to the motion. May I hear the motion again?

(Reporter reads)

RUCH: One of the problems of long-term primate studies is procurement, which is an immediate problem. It comes into existence long before the institute could be built.

QUIGLEY: It should be settled before the building is started.

SNIDER: We have a motion on the floor. I would like, I think, correct me Dr. Hamm if need be, I would like very much to see the major part of this Committee, before we get too far involved, visit the Air Force establishment at Austin. That would solve the radiation aspects, and then the broader aspects concerning the Public Health Service. Certainly the subcommittee would be much better off then.

FURTH: The motion has been made and seconded, and I understand it is now up for discussion. Right? I question the wisdom of the appointment coming from you alone at the moment. You appoint representatives of this Committee. The sub-committee now has to be much broader. It should have a member of gerontology, cancer research, etc. I think you have to have a member of the AEC and the armed forces represented.

QUIGLEY: And the Veterans Administration too.

FURTH: The subcommittee should be represented at least by one of the interested parties and then I wish the subcommittee would report here on September 28 at our next meeting and that they bring to us very specific recommendations as to the problem at large and also instructions to go along with Dr. Endicott's request. I think our chairman should in consultation with Drs. Meader, Endicott, Dunham and others appoint a subcommittee.

SNIDER: There is a motion on the floor. Dr. Furth, do you have an amendment?

FURTH: I don't understand what the Committee wants. You said only one group, but the plan is much broader. Therefore the sub-committee would have to be broader. You cannot force Dr. Dunham to go. You can invite him. Invite representatives of all interested parties.

SNIDER: Are we supposed to vote on this modification or not?

QUIGLEY: No.

SNIDER: You want to rephrase the modification?

QUIGLEY: No.

CURTIS: We are voting on the amendment first.

RUCH: What is the amendment?

FURTH: The amendment is that a sub-committee be appointed by the Public Health Service and that other agencies be invited to assign or appoint representatives to serve on it.

SNIDER: Everyone in favor of that amendment say Aye.

ALL IN FAVOR.

SNIDER: The amendment has been added and now let's vote on the motion.

RUCH: I would like to make an amendment that this sub-committee be empowered to consider other devices for facilitating primate research. Add this to the recommendation.

QUIGLEY: We'll end up by being confused as to what we want.

SNIDER: We have a motion on the floor. All in favor of the motion.

ENDICOTT: There is no reason why Dr. Snider, as Chairman, can't appoint a sub-committee consisting of members of the Committee on Radiation Studies and such other persons as he wishes to invite.

SNIDER: I would like to point out along that same line by the way, Dr. Endicott, that the steering committee did meet with ONR for example, and

they met with another government agency before, so that this is in order, and I would like to have a motion.

QUIGLEY: The original sub-committee consists of others.

ENDICOTT: Drs. Engle and Shock.

SNIDER: Vote. All in favor of the proposal as made and modified say aye.

ALL IN FAVOR

SNIDER: That was unanimous. There are only a couple of minor things to consider. Dr Nickson has a real problem.

NICKSON: As a result of the discussion yesterday, it became quite evident, I think, again that something has to be done about giving assistance to the grantees. If the Committee agrees, as the member left of the sub-committee on dosimetry, which Dr. Cantril chaired, I would like to draw up a protocol, both for the investigators and possibly for the Committee. The question of periodical surveys and advice to people who wish it, on conditions of exposure, seems to me ought to be a continuing thing. We must get a qualified group to make a request for a grant-in-aid to this group with this aid in mind. If this second aspect seems reasonable, I would like to explore the possibility of getting a qualified group to do this for the investigators.

ENDICOTT: May I suggest that we have a very convenient device here for financing this type of activity which I think is appropriate, namely the Chairman's grant. I don't think it would be at all necessary to put in a specific application.

SNIDER: This question of dosimetry is quite desirable. Is there a motion on the floor concerning this? Do I hear a second? Everything is passed. Meeting adjourned.
